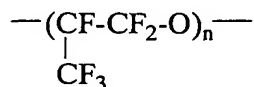


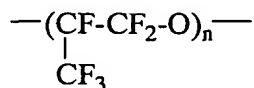
CLAIMS:

1. A semiconductor pressure sensor device comprising a housing having a cavity, a semiconductor sensor chip mounted within the cavity for detecting a pressure to produce a signal, leads for conveying the signal, and bonding wires providing electrical connection between said sensor chip and said leads, wherein a sensitive portion of said sensor chip, said leads and said bonding wires are covered and protected with an electrically insulating fluorochemical gel material, said fluorochemical gel material having a penetration of 30 to 60 as measured by the consistency test of JIS K2220 using a 1/4 cone, a glass transition temperature of up to -45°C, and a degree of saturation swelling in gasoline at 23°C of up to 7% by weight.

2. The semiconductor pressure sensor device of claim 1 wherein said fluorochemical gel material is a cured product of a curable composition comprising components (A) to (E):
(A) 100 parts by weight of a chain-like polyfluorodialkenyl compound having an alkenyl group at each end of a molecular chain and containing a backbone skeleton represented by the formula:



(B) 40 to 160 parts by weight of a chain-like polyfluoromonoalkenyl compound having an alkenyl group at one end of a molecular chain and containing a backbone skeleton represented by the formula:



(C) a fluorinated organosilicon compound having at least two hydrosilyl groups in a molecule, in an amount to give 0.8 to 1.2 equivalents of hydrosilyl groups based on the entire alkenyl groups in components (A) and (B),

(D) a catalytic amount of a platinum group compound,
and

(E) up to 40 parts by weight of a non-functional
perfluoropolyether per 100 parts by weight of components (A)
5 and (B) combined.

3. A semiconductor pressure sensor device comprising a
housing having a cavity, a semiconductor sensor chip mounted
within the cavity for detecting a pressure to produce a
10 signal, leads embedded in the housing by insert molding for
conveying the signal, and bonding wires providing electrical
connection between said sensor chip and said leads, wherein
at least said leads and surrounding portions are covered with
an electrically insulating fluorochemical rubber material
15 while a sensitive portion of said sensor chip is exposed,
said fluorochemical rubber material and the sensitive portion
of said sensor chip are covered with an electrically
insulating fluorochemical gel material, and said bonding
wires are covered with said fluorochemical rubber material
20 and said fluorochemical gel material,

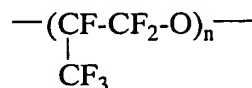
said fluorochemical rubber material having a hardness
of 5 to 35 according to JIS K6253, said fluorochemical gel
material having a penetration of 30 to 60 as measured by the
consistency test of JIS K2220 using a 1/4 cone, said
25 fluorochemical rubber material and said fluorochemical gel
material both having a glass transition temperature of up to
-45°C and a degree of saturation swelling in gasoline at 23°C
of up to 7% by weight.

30 4. The semiconductor pressure sensor device of claim 3
wherein a member through which said semiconductor sensor chip
is mounted to the housing is also covered with said
fluorochemical rubber material.

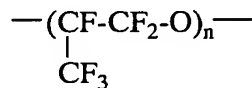
35 5. The semiconductor pressure sensor device of claim 3
wherein said fluorochemical rubber material is a cured
product of a curable composition comprising components (A),

(C), (D), (E), (F) and (G), and said fluorochemical gel material is a cured product of a curable composition comprising components (A), (B), (C), (D) and (E):

- (A) 100 parts by weight of a chain-like
5 polyfluorodialkenyl compound having an alkenyl group at each end of a molecular chain and containing a backbone skeleton represented by the formula:



- (B) 40 to 160 parts by weight of a chain-like
10 polyfluoromonoalkenyl compound having an alkenyl group at one end of a molecular chain and containing a backbone skeleton represented by the formula:



- (C) a fluorinated organosilicon compound having at
15 least two hydrosilyl groups in a molecule, in an amount to give 0.8 to 1.5 equivalents of hydrosilyl groups based on the entire alkenyl groups in components (A) and (B),

(D) a catalytic amount of a platinum group compound,

- (E) up to 40 parts by weight of a non-functional
20 perfluoropolyether per 100 parts by weight of components (A) and (B) combined,

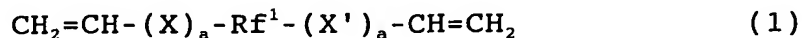
(F) 1 to 5 parts by weight of hydrophobic finely divided silica, and

- (G) 0.1 to 3.0 parts by weight of an organosilicon
25 compound having at least one trialkoxysilyl and/or epoxy group in a molecule.

6. The semiconductor pressure sensor device of claim 5 wherein said fluorochemical rubber material is a cured
30 product of the curable composition further comprising (H) 0.1 to 0.5 part by weight of a carboxylic acid anhydride per 100 parts by weight of component (A).

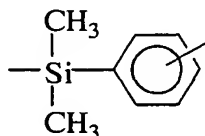
7. The semiconductor pressure sensor device of claim 2 wherein component (A) is a chain-like polyfluorodialkenyl compound having side chains represented by the general formula (1):

5



wherein X is a divalent group represented by $-\text{CH}_2-$, $-\text{CH}_2\text{O}-$, $-\text{CH}_2\text{OCH}_2-$ or $-\text{Y}-\text{NR}^1-\text{CO}-$ wherein Y is a divalent group represented by $-\text{CH}_2-$ or

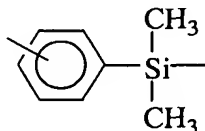
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and R^1 is hydrogen or a substituted or unsubstituted monovalent hydrocarbon group,

X' is a divalent group represented by $-\text{CH}_2-$, $-\text{OCH}_2-$, $-\text{CH}_2\text{OCH}_2-$ or $-\text{CO}-\text{NR}^1-\text{Y}'-$ wherein Y' is a divalent group represented by $-\text{CH}_2-$ or

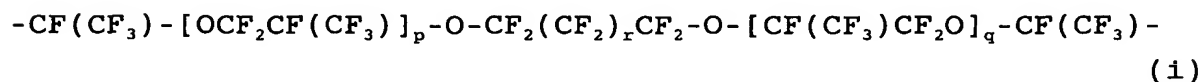
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and R^1 is as defined above, "a" is independently equal to 0 or 1,

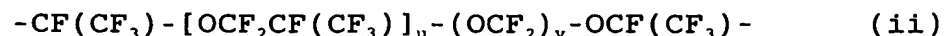
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Rf^1 is a divalent group having the general formula (i):



wherein p and q each are an integer of at least 1, the sum of p and q on average is 2 to 200, and r is an integer of 0 to 6, or the general formula (ii):

25



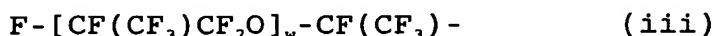
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wherein u is an integer of 1 to 200, and v is an integer of 1 to 50.

8. The semiconductor pressure sensor device of claim 2 wherein component (B) is a chain-like polyfluoromonoalkenyl compound having side chains represented by the general formula (2):

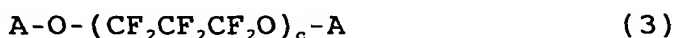


wherein X' and "a" are as defined above, Rf² is a group of the general formula (iii):

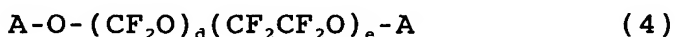


wherein w is an integer of at least 1, which is smaller than any of the sum of p+q (average) and r and the sum of u and v for Rf¹ in formula (1).

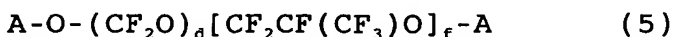
9. The semiconductor pressure sensor device of claim 2 wherein component (E) is at least one non-functional perfluoropolyether selected from the group consisting of compounds having the general formulae (3) to (5):



wherein A is independently CF₃-, C₂F₅- or C₃F₇-, and c is an integer of 1 to 200, which is smaller than any of the sum of p+q (average) and r, the sum of s+t (average) and r, and the sum of u and v for Rf¹ in formula (1),



wherein A is as defined above, d and e each are an integer of 1 to 200, and the sum of d and e is equal to or smaller than any of the sum of p+q (average) and r, the sum of s+t (average) and r, and the sum of u and v for Rf¹ in formula (1),



wherein A is as defined above, d and f each are an integer of 1 to 200, and the sum of d and f is equal to or smaller than any of the sum of p+q (average) and r, the sum of s+t

(average) and r , and the sum of u and v for Rf^1 in formula (1).